

**WATER RESOURCES BOARD
INTER-OFFICE MEMO**

To: M. Paul Sams, General Manager
From: Connie McGreavy and Kathy Crawley
Date: June 4, 2002
Subject: **Water Allocation Program Update**

BACKGROUND

FY 1999-2000

Since its inception in the summer of 1999, Water Allocation Program development has been multifaceted. Components include research/assessment, monitoring, management information systems (MIS) and interagency education/coordination. Two staff persons were assigned to build the program. Policy direction from the Board indicated a preference for a nonregulatory approach that involved consensus building, education and mediation [of disputes]. After the initial research phase, staff divided their efforts between policy development and information systems planning.

Research on water allocation programs in other states included legislative, regulatory and adjudicatory aspects of drought, water withdrawal/allocation, water quality/[low] stream flow, conservation and water rights. Rhode Island State Guide Plan (SGP) elements 721: Water Supply Policies, 722: Water Supply Plan, 723, RI Water Emergency Response Plan and 162: RI Rivers Plan, were also reviewed for policy direction. Staff conducted intensive research into data systems that would better enable and/or automate data collection, analyses, visualization, storage and sharing/distribution processes. Particular attention was focused on investigating real-time information systems that would allow for continuous decision support. As part of this process, staff also submitted a \$400,000, two-year grant under the US EPA's EMPACT (Environmental Monitoring, Public Access and Community Tracking) program to devise a computer-driven Drought Alert Network.

In August of 1999, it was apparent that the state was experiencing a severe drought. The RI Dept. of Administration, Statewide Planning Program was contacted to begin preparation of a new state plan for drought concurrent with water allocation program development. In the interim, the Board convened an interdisciplinary drought task force; water allocation program staff worked with the task force to prepare short-term drought guidelines. Staff also began attending meetings of the New England Water Works Association, Groundwater Resources Committee. This group was coincidentally working on a summary of diversion programs in each New England state. During this time, the Board initiated water use and availability studies statewide with the US Geological Survey (USGS). Staff continually updated the Public Drinking Water Protection Committee on these findings.

FY 2000-2001

In the spring of 2000, the Board committed to piloting NEWUDS (New England Water Use Data System)—a hydrologic database proposed by the USGS—as part of the Wood-Pawcatuck water use and availability study. Staff reviewed the data in the Water Supply System Management Plans (WSSMPs) from a quality assurance and data capture standpoint. Based on the review, staff recommended appropriate modifications to NEWUDS. Staff also recommended compiling data in a manner similar to the earlier Arthur D. Little study so that valid comparisons of water use and availability could be made. A lengthy list of data sources (hard copy and electronic) was compiled for eventual integration with NEWUDS. Data gaps and limitations were identified. Staff worked with the USGS to obtain basic maps of the groundwater well and stream gauge networks. Staff also tested file transfer protocols with state, federal and local data suppliers, including access to real-time data where it existed. An official forum for

discussing joint MIS initiatives with other agencies to enable accurate and collaborative decision-making was arranged in the fall. The lack of data availability and data systems in general was noted. Participants acknowledged the institutional barriers inherent in collecting and sharing information. Nonetheless, steps were taken (and grants written) to retrieve available data and organize it. Examples of data sets include groundwater wells (public and private), stream gauges (public and private), industry users including farmers, golf courses and other major irrigators and/or users, monitoring and compliance data, census data and other socioeconomic information that would be considered in a water allocation program. Maps, image data and build-out analyses were also sought from communities not served by public water. The states of Connecticut and Massachusetts were queried regarding data gaps at four regional basins that intersect Rhode Island borders.

As part of water allocation program development, staff designed a comprehensive, five-year MIS program and budget, coupled with an Internet-based, public education program. The Board published its first web page, including the design of a water allocation, mapping and data section. The Board purchased GIS software and sought funding for a GIS Technician. Staff eventually recommended revisions to the Rules & Regulations for Water Supply Systems Management Plans to provide for electronic submission and web posting of WSSMPs. This would facilitate data transfer from tables and geographic information systems (maps) while greatly enhancing the public's access to fundamental water systems management information. Staff conducted an information technology survey of major public water suppliers to ensure future "connectivity" and pave the way for automated transfer and distribution of water data for decision-making. Staff continually updated the Public Drinking Water Protection Committee and the Board on these findings.

During FY 2000-2001, a series of educational forums on stream flow were held in an effort to better understand the relationship of [low] stream flow to water availability, use, allocation, quality and habitat protection. A number of experts reported on various techniques and indices to measure stream flow and assess the impact of low flow on human consumption as well as the environment. (*See Attachment A.*)

Note: The staff person assigned to water allocation policy development left the agency near the end of the fiscal year. This supervising planner position was not replaced for approximately six months due to civil service examination requirements.

FY 2001-2002

During this period, consultants provided ongoing support for the water use studies, database development and mapping services. Major efforts of the water allocation program staff during this fiscal year were redirected to development and implementation of the long-term Drought Management Plan, grant writing for information systems, response to the events of Sept. 11, 2001, and the Strategic Planning Workshop. Staff is active in addressing numerous audiences regarding drought, forums where discussion often segues into stream flow and water allocation issues. The drought planning process also provided several opportunities for the public to comment on water supply and allocation. Attention to the potential water shortage prompt dialogue about whether Rhode Island should be regulating water withdrawals. The RI Water Works Association (RIWWA) recently formulated a policy statement on stream flow that was presented during a workshop on water quantity in Washington County. The position acknowledged that prioritization and ranking of water allocation will be difficult and that there may be regulatory and enforcement aspects to flow allocation policy. This position also specifies the need for a central database of stream flow data "in order to generate technically sound findings upon which to promulgate fair and equitable regulations". (*See Attachment B*)

During the strategic planning session in April, the Board prioritized water allocation over all other programs. Discussion centered on a number of issues. Mr. Reitsma suggested that the Board rethink its tenet of a non-regulatory approach to one that contains regulatory components. The Board recognized the

immediate need to complete the drought plan. Board members recognized the importance of timing due to the current drought and the fact that the drought plan may result in ad hoc water allocation policy. The Board also acknowledged the need to address conservation education in the short term with a long-term focus on resource management strategies such as integrated water and wastewater planning and water rate planning. The board also recognized the importance of solid data, understanding that it was important to move from science to management. There was discussion about the components of water allocation policy and the need to sufficiently consider outcomes in developing policy.

DISCUSSION

Existing Legal, Regulatory and Policy Framework

Rhode Island General Laws § 46-15.7 *et seq* states that “*the water resources board is the state agency which manages the withdrawal and use of the waters of the state of Rhode Island*”. The statute further states that “The Board shall conduct a comprehensive and detailed inventory of the water resources of this state, and shall maintain the inventory on a current and valid basis.” (*See Attachment C*)

In addition to the authority vested in the Water Resources Board for managing water withdrawal, are laws, policies, and regulations that will guide the development of new policy. Establishing priorities among uses will necessitate a thorough understanding of the existing, decentralized framework acknowledging that some priorities have been established legally, as policy, through regulation and local agreements.

Current Status of Data Collection Program

The Board is a “Cooperator” with the USGS in a comprehensive effort to collect the data necessary to manage the state’s water resources on a watershed basis. There are concerns about the adequacy and availability of data. The lack of real-time stream gauging data and the need for additional gauges have been identified as gaps. The variability of the data from water suppliers affects the validity of water allocation decisions.

The USGS has stated that all water use and availability studies will be completed by 2004. Follow-up modeling and optimization studies are planned along with a statewide data summary through the year 2008. In addition, efforts to establish gauges to monitor low flow data are slated to begin in 2004 with development of “estimating equations”, i.e., web-based, stream flow statistics, budgeted for 2008. Water use and availability reports for the Blackstone and Pawcatuck are expected this month. NEWUDS is anticipated to be available for Board use by the end of this year. Once staff is trained to use the database, simple analysis can begin. As the water use studies are completed, that data will also be entered into NEWUDS allowing for more sophisticated analysis on a regional basis. Determining when we have sufficient data to make legally sound decisions will be key.

RECOMMENDATIONS

Given overlapping authorities in water resources management, staff recommends that more research be conducted by an attorney to understand the complex legal framework within which water allocation decisions will be made. Ideally, this would include an assessment of how proposed allocation policy would stand up to legal challenges.

Staff recommends that the Board focus on the Wood-Pawcatuck watershed for analysis after roll out of NEWUDS. This area is located within the Southern [drought planning] Region and has shown signs of stress. In addition to a nearly complete water use study, modeling and habitat assessment are ongoing which could further contribute to the database. Local citizens groups in Washington County have repeatedly requested assistance in water supply-related decision-making. The Blackstone would be the second priority area for similar reasons.

Staff further recommends that the Board establish an interdisciplinary work group to address the issue of stream flow and how it relates to water allocation policy. At the Strategic Planning meeting, the Board agreed to convene a taskforce to discuss water/wastewater planning and to meet with the Public Utilities Commission regarding water rate planning. Staff requests guidance from the Board on how to integrate these initiatives in the context of the water allocation program.

ATTACHMENT A: MINUTES OF THE FLOW FORUM HELD ON MAY 2, 2000

ATTACHMENT B: RIWWA FLOW ALLOCATION POLICY POSITION (TO BE DISTRIBUTED AT BOARD MEETING)

ATTACHMENT C: RIGL §46-15.7-1-3 MANAGEMENT OF THE WITHDRAWAL AND USE OF THE WATERS OF THE STATE

ATTACHMENT A

**MINUTES OF THE FLOW FORUM
HELD ON MAY 2, 2000**

ATTACHMENT B

RIWWA FLOW ALLOCATION POLICY POSITION

(TO BE DISTRIBUTED AT BOARD MEETING)

ATTACHMENT C

RIGL §46-15.7-1-3

**MANAGEMENT OF THE WITHDRAWAL AND USE
OF THE WATERS OF THE STATE**